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AUTHOR McNair, Jeff
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ABSTRACT

This paper reviews recent literature related to co-worker involvement in non-sheltered community-based employment programs for persons with mental retardation. Discussion of co-worker roles is categorized into six areas: training, associating, befriending, advocating, evaluating, and information giving. Also discussed are other variables potentially influencing co-worker involvement, including integration variables (physical integration, social integration, and vocational integration) and factors related to characteristics of individuals, the employment site, and employment in general (supported employment model, type of job, etc.). The existing research shows that co-workers are involved with employees with handicaps in at least the six areas described. Includes 41 references. (Author/DB)

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Co-worker Involvement in Employment Programs for Persons with Mental Retardation

Jeff McNair
California State University, San Bernardino

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Abstract

This article reviews recent literature related to co-worker involvement in employment programs for persons with mental retardation. Discussion of co-worker roles is categorized into six categories (training, associating, befriending, advocating, evaluating, and information giving). Other variables potentially influencing co-worker involvement including integration variables (physical integration, social integration, and vocational integration), and factors related to characteristics of individuals, the employment site and employment in general (supported employment model, type of job, etc.). Conclusions are drawn and recommendations for further research are shared.

Co-worker Involvement in Employment Programs
for Persons with Mental Retardation

Integrated employment has become a reality for many persons with mental retardation. Just a few years ago, work was at best largely only available in segregated sheltered situations and at worst unavailable whatsoever. However, research today has demonstrated that persons representing a wide range of disability can learn skills necessary to work and are finding work in nonsheltered integrated settings. Much of the success of these individuals can be attributed to the application of the supported work model to their particular employment situation. This approach systematizes processes important to a) preparation of individuals for employment, b) acquisition of a job, c) training, and d) follow-up/maintenance of employment (Wehman, 1981; Rusch and Mithaug, 1980).

Yet, within the supported work model, resided the idea of time limited services. That is, employment training specialists responsible for training and support on the job would eventually fade themselves out of the situation. This continued to be a reasonable approach until it was realized that some workers having more severe disabilities would always need direct supervision or support in order to maintain their employment. This realization resulted in a modification of the supported work model which provided access to ongoing services for the target employee's entire work tenure. Therefore as a result of this modification, the supported work model could be applied in a time limited fashion or in an ongoing manner, at least in relation to training and support aspects. The former of these modified programs resulted in what has been labeled "supported work" (time limited services) leading to competitive employment, and the latter "supported employment" (ongoing services) with its outcome being supported employment. In either case, individuals with disabilities were now finding their way into integrated, nonsheltered, community based employment.

The entrance of individuals with handicaps into the workplace forced a new set of issues on service providers. Questions related to job termination, interactions with nonhandicapped co-workers, community based vocational training, and normalization in the employment setting which were largely irrelevant in sheltered employment settings, suddenly became the focus of a significant research effort. Although work in each of these areas is in its infancy, the question of co-worker involvement in employment settings, to date, has perhaps been the least investigated. Basic questions related to whether co-workers are involved at all with target employees in the

workplace have just recently begun to be addressed (Minch, 1987; Rusch, Hughes, Johnson, and Minch, 1988; McNair, 1989b; Rusch, Hughes, and Johnson, 1988). Questions regarding the types of roles co-workers engender in the employment setting are also currently being investigated (Shafer, 1986; Shafer, Rice, Metzler, & Haring, 1989;McNair, 1989b). Questions are just beginning to be asked about the types of factors which influence or predict co-worker involvement (McNair, 1989a; McNair, 1990). Clearly, research in this area is just now emerging, however, some work utilizing co-workers has been completed. As shall be shown, these early efforts most often used co-workers or supervisors in the social validation of goals, procedures or outcomes of training programs in the workplace. More recently, studies have begun to address co-workers directly as the focus of research.

Social Validation

Much of the early work using co-workers in relation to employees with handicaps related to the study of the concept of social validation in the employment setting. Social validation has traditionally been used as a means of evaluating levels of behavior (Kazdin, 1977; Wolf, 1978) or applied interventions (Minken, Braukman, Minken, Timbers, Timbers, Fixen, Phillips, and Wolf, 1976). It is an important means by which goals, procedures, and outcomes can be justified (Kazdin, 1977; White, 1986; Wolf, 1978). This is typically achieved through eliciting the perceptions of persons intimately acquainted with a client or routine, and/or knowledgeable about a particular area of endeavor. Additionally, the success of the social validation process hinges on its being interactive in nature. Input from validating persons is used like a plumb line or standard. It provides evaluative information crucial for making decisions about the importance of goals, acceptability of interventions/behavior change procedures, and success of outcomes.

In these social validation studies, the emphasis was placed upon determination of or agreement with standards of community based vocational placements. Co-workers were involved with employees with handicaps in a variety of ways, however, the focus differed from more recent studies. Past efforts brought procedures or ideas for involvement by co-workers to the workplace, for them to participate in or agree to.

Today, the focus is upon naturally occurring involvement in the workplace. Once there is a basic understanding of what is occurring in the workplace at the small group level, then efforts can be made to address remediatory intervention. Once it is known which roles co-workers are assuming, it can then be determined how roles which are readily embraced support target employees in their work. In addition, interventions can be designed to build roles which may not

be as overtly evident but need to be developed. It is only at this point that surgical intervention geared to facilitate co-worker support in particular areas should be initiated.

Co-worker Roles

Generally speaking, six co-worker roles have been identified in the literature. The roles identified being; training, associating, befriending, advocacy, evaluating and information giving. The majority of studies specific to co-worker roles in integrated settings have been completed by Rusch and his colleagues, although others have also made significant contributions. The following is a description of the literature relative to each of the six co-worker roles.

Insert Table 1 about here

Training

The literature defines co-worker training in several ways, as listed in Table 1. Only in the case of the Rusch, Hughes, & McNair (1988) definition, however, is training linked to the provision of those skills identified in the Individualized Written Rehabilitation Plan (IWRP). However, the literature most often does not specifically address whether skills which are the focus of intervention are designated in an IWRP. A broader definition will therefore be taken for the purpose of this review. Training will be defined as instruction provided by co-workers or supervisors in the employment context.

Rusch, Weithers, Menchetti, and Schutz (1980) were one of the first groups to report using co-workers to change the behavior of an employee with moderate mental retardation. Three co-workers who worked with a target employee were enlisted to assist in decreasing his repetitions of topic during lunch or dinner conversation. Co-workers were provided with preinstruction identifying the fact that the target employee repeated the same topic too often and then were trained in defining what constituted an occurrence of topic repetition needing feedback. They were also instructed to provide the target employee with feedback regarding his topic repetition. At a later stage, the co-workers were cued by the experimenter should they overlook an instance of topic repetition. Results indicated that the co-worker mediated strategy significantly decreased topic repetition in the target employee.

Schutz, Rusch, and Lamson (1979) used an intervention validated by an employer to reduce the verbally abusive behavior of an employee with mental retardation toward his instructor, co-workers and supervisor. The procedures in this case also were those typically used in this

particular work setting. The intervention consisting of warnings and subsequent one day suspensions proved to be successful in reducing the inappropriate aggressive behavior.

In another study, Rusch and Menchetti (1981) increased compliant work behaviors in a moderately mentally retarded kitchen worker. Problems emanated from the fact that the target employee would not follow directions or assist other staff when they needed or requested the target employee to do so. A strategy was formulated whereby when the target employee responded to co-workers in a negative manner, the co-workers were to report the noncompliance incident to the staff supervisor. Continued noncompliance resulted in the employee being sent home. This was the normal disciplinary procedure for any employee in the setting. As a result of intervention, the target employee's noncompliant behavior decreased and surprisingly, compliance was also generalized to another co-worker group not directly involved in the intervention.

Nisbet and Vincent (1986) investigated the nature and frequency of instructional interactions of 15 workers in nonsheltered vocational settings and 15 workers in sheltered vocational environments. Only the nonsheltered data will be examined here. The workers in the nonsheltered environments had IQs ranging from 40 to 60. The researchers found that there was a mean frequency of 5.7 instructional interactions per hour between target employees and supervisors. Additionally, these interactions occurred during work and break periods. The authors did not clarify what specifically was meant by "instructional interactions" so it is difficult to draw conclusions about what exactly they were. The important finding, however, is that interactions related to instruction were occurring and occurring frequently.

Minch (1987), examined co-worker support provided to 33 target employees in supported employment programs. The employees' mean IQ was 58, with scores ranging from 18 to 74. Workers' employment tenure ranged from 8 to 12 months (mean 11 months). The supported employment agency personnel coded co-worker involvement according to a six item scale, and reported this information every three months. See Table 1 for item definitions. Results indicated that co-workers were involved with target employees in each of the six roles. Results specifically related to training indicated that 52% of target employees had co-worker trainers. Minch (1987) also tested for relationships between the co-worker involvement indices and scores on the Vocational Assessment and Curriculum Guide (VACG) (Rusch, Schutz, Mithaug, Stewart, and Mar, 1982). Several relationships were observed. First, she found increased co-worker support in the form of training, associating, and befriending was observed in target employees achieving 80%

production scores on the VACG. Then, target employees with high production scores received more training than target employees with low production scores.

In a similar study, Rusch, Hughes, Johnson, and Minch (1988) surveyed supported employment placements in the State of Illinois. Target employees evidenced a wide range of mental retardation (27.4% moderate and 9.4% severe/profound). The researchers found that 56 percent of the target employees were trained by co-workers. A later study by Rusch, Hughes, and Johnson (1988) with a similar sample, resulted in a figure of 52 percent.

Rusch, Minch, and Hughes (in press) surveyed employment supervisors and found that 9 of the 10 supervisors indicated that they used co-workers to assist with training. In most cases, the new employees were paired with a veteran worker in a mentor-like fashion.

McNair (1989b) in a study of supported employment sites across the State of Illinois observed that 33 percent of workers with a wide range of mental retardation (approximately 40% moderate to severe mental retardation) in supported employment received training from co-workers which had been designated in an Individualized Written Rehabilitation Plan, and that in only 24 percent of cases were co-workers not training employees with disabilities in IWRP skills (43% providing training if prompted by employment training specialist).

Finally, Wilson, Shepis, and Mason-Main (1987) used co-workers to assist in the fading of employment specialist involvement in training. The employment specialist had been training the target employee in the kitchen area of a restaurant. Once the employee reached skill level criterion, the employment specialist began to fade himself from the immediate work area, by situating himself in another room. Concurrently, he gradually turned training responsibilities (prompting and reinforcing) over to the employer/co-workers. Eventually, persons indigenous to the site were responsible for training.

One limitation in each of these studies, however, is that the type of training was not specifically described. Minch (1987) approached an operationalized definition of training, but no reliability data was provided indicating whether the meaning of training was consistently understood across service providers. Additionally there was no mention of the percentage of co-workers who were "increasing quality or rate," "demonstrating new job tasks," "providing prompts," or "giving corrective feedback." Perhaps a better approach to collecting training data would be to begin with the Meyer criteria reported in Ford, Dempsey, Black, Davern, Schorr, and Meyer (1986)(cited in Mcloughlin) and to gain reliability across raters. This criteria breaks training down into "provides no direct instruction; facilitate the occurrence of the routine using only the

natural cues found in the workplace..., provide systematic training...modify the natural method providing an adaption, or arranging for partial assistance from co-workers" (p. 141). This schema if translated into a series of items would result in the collection of more descriptive and potentially more useful training data.

Associating

Several definitions of associating have been provided in the literature (see Table 1). In the case of the Rusch, Hughes, & McNair (1988) definition, there is the stipulation that interactions must occur in a "manner considered appropriate." There is logic behind this ambiguity, in that interactions considered appropriate among warehouse workers for example, would probably not be the same as in a service job in which there is continual interfacing with the public. The judgment of appropriateness therefore might be left to the individual familiar with the particular work site although there are obviously potential problems with this approach.

Associating may be equated with "affiliation" regarding which there is a fairly extensive literature. Landesman-Dwyer, Berkson, and Romer (1988) and Romer and Berkson (1979) in their studies originally described affiliation as being comprised of two dimensions. The first, extensity, relates to the number of different groups with which a person affiliates. The second, intensity, relates to the amount of time an individual spends in a particular group. Thus, extensity refers to the number of social contacts a person has, or their sociability, while, intensity relates to intimacy. It is the propensity to form close relationships with particular individuals.

In a later study, Romer and Berkson (1980) added a third dimension to the definition of affiliation, "aggregation." Aggregation is the "tendency to be seen in aggregate with others while engaged in the same behavior but not actively in communication with them" (p. 231). In the workplace aggregations commonly occur. People often will work together without active communication. Aggregation may be a constraint of a work environment in that workers may have to work in the same area with no regard for their choice in the matter. Aggregation by choice may also occur in some types of work settings where there is freedom of choosing the location for one's work (prepricing, some food service positions, some maintenance positions, etc.) and at breaks or meals. For example, at break employees may aggregate at a particular location to smoke cigarettes, and yet not interact.

Albert Mehrabian in his book A Theory of Affiliation (1984) drew several interesting conclusions about affiliation. First, affiliation often occurs in situations where a person is uncertain of his or her abilities. Affiliation therefore can be a means whereby an individual can allay his or her

feelings of inadequacy via social comparison. Secondly, conformity occasionally has been shown to relate to affiliation in that persons who were frequent affiliators were also more often conformists. Thirdly, he found that conformity was a function of dependency. Fourthly, positive expectations are associated with positive interactions and negative expectations are associated with negative interactions. Lastly, perceived greater similarity with others leads to more affiliation. Each of these findings will be examined individually below.

How might Mehrabian's observations apply to workers with disabilities in the employment context? First, assuming a particular person with mental retardation is sensitive to his/her abilities in comparison to co-workers, there very well could be feelings of inadequacy. Affiliative behavior may therefore be initiated by the worker with handicaps in order to assess how he/she measures up to peers. Second, an obvious target of community based vocational training for workers with disabilities has been the breeding of conformity. In social validation we look at social comparison and subjective evaluation in relation to behaviors being evidenced by others in the environment. In many ways, social validation itself is a measure of conformity. This kind of conformity may be such that it leads to increased affiliation, at least on the part of the person who is conforming. The question which needs to be asked by trainers of workers with handicaps is whether conformity leads to affiliation initiated by those with whom the worker is conforming. Third, the finding that conformity is a function of dependency is disturbing from a normalization perspective. Trainers using a social validation approach may be devaluing the worker with handicaps by emphasizing conformity and ultimately dependency. Intuitively, the reader may identify with the idea that socially devalued persons conform in attempts to belong. This observation is an important subtlety which professionals involved in any form of externally sustained vocational arrangement must seek to circumvent. This observation when considered in the light of research indicating that target employees with friends had high independence scores (Minch, 1987) causes one to wonder whether the dependency potentially resulting from supported employment in its current form, results in the low levels of co-worker befriending observed later in this paper. Others have observed that the introduction of an outside source of expertise into an employment setting breeds dependency (French and Bell, 1984; Nisbet & Hagner, 1988). This dependency can result in increased difficulty in fading employment training specialists from the work site.

Then, attempts to positively influence both target employee and co-worker perceptions could in the long term lead to more affiliative behavior among workers and increased longevity of employment. Hill, Wehman, Hill, and Goodall (1985) found that the second greatest reason for

job separations (accounting for 18 percent of lost jobs) was due to negative employer/co-worker attitudes even though the worker was working up to employer standards. In the Rusch, Weithers, Menchetti, and Schutz (1980) study mentioned earlier, a comparison was made of discussion topics repeated by a worker with mental retardation with those of nonhandicapped co-workers. They observed that the target employee would repeat topics five times more frequently than his co-workers. Thus a five-fold reduction of the topic repetition to the level of co-workers' became the goal chosen for intervention (i.e. on the basis of social comparison). After intervention, data indicated that the target employee reduced his topic repetition to co-worker levels. Social comparison, however, indicated that co-workers felt topic repetitions had not decreased. Perhaps this indicates that co-workers should be privy to training data in some cases, as the co-worker perceptions were incorrect based upon the training data. Further, Shafer, Rice, Metzler, & Haring (1989), observed that contrary to their hypothesis, although workplace contact between co-workers and target employees enhanced acceptance, there was no observed effect upon co-workers' perceptions of target employee competence. Lastly, efforts must be made by job coaches to intervene in nonstigmatizing ways (Dudley, 1983). Target employees if perceived as much as possible as just regular employees may experience increased affiliation compared with workers who are presented as deviant via trainer behaviors.

The literature has addressed associating specific to the workplace, although in a very limited fashion. As previously mentioned, Nisbet and Vincent (1986) described the occurrence of instructional interactions in the workplace. They also discussed the appropriateness of target employee interactions.

The problem of topic repetition addressed by Rusch, Weithers, Menchetti, and Schutz (1980) clearly indicates that co-workers were associating with a target employee before the researchers came onto the scene. Additonally, co-workers expressed interest enough to desire the target employee to interact appropriately.

Rusch, Hughes, Johnson, and Minch (1988) reported that 87 percent of target employees had co-worker associates. Rusch, Hughes, and Johnson (1988) later reported a figure of 78 percent. This is contrasted with the much smaller figure reported by Minch (1987). She observed that 45 percent of target employees had co-worker associates. She also found that target employees with high VACG behavior scores more often associated with co-workers than did those with low behavior scores.

Using the Rusch, Hughes & McNair (1988) definition of association, which divided

association into the frequency of association (associating frequency) and the nature of the association (associating nature) McNair(1989b) found that 76 percent of co-workers interact with supported employees "typically on a daily basis." Only 6 percent of co-workers interacted once or twice a month, with those interactions not being intentional. Relative to the nature of associations, McNair observed that in 81 percent of cases, the nature of the interactions was considered by the employment training specialist or job supervisor as "appropriate" in that particular workplace context. In only 15 percent of cases were interactions considered inappropriate and in only 4 percent of cases were there no interactions between employment training specialists and target employees.

Although Rusch, Hughes, & McNair (1988) did break associating down into two categories, there is much information which could be gathered with an increase in variables assessed in relation to associating. For example, in each case no distinction was made as to a) who initiates the social interaction, b) what is the topic of the interaction, c) what is the type of interaction or d) what is the tone of the interactions. There is also no mention of any specific time during which interactions may occur.

Befriending

A discussion of association among co-workers naturally leads to the question of friendship Co-worker friendship definitions generally include statements relative to social interaction outside of the workplace (see Table 1).

However, Chadsey-Rusch, Gonzalez, and Tines (1988) found that the amount of socializing which occurred among workers outside of work was not significant. Additionally, of those workers indicating they wished they had more friends, only a few wanted more friends at work. Kaufman (1984) also concluded that all workers, not just employees with mental retardation may not be making work friends. Workers therefore may not be interacting with co-workers whatsoever outside of the workplace, but have developed friendships elsewhere. Clearly, the basic question of the definition of friendship must be answered before conclusions can be drawn.

Regarding nonsheltered employment settings, little has been written. McNair (1989b) observed that in 83 percent of cases there were no friendships among co-workers and employees with disabilities. In only 17 percent of cases did co-workers report intentional social interactions with target employees outside of the workplace. Rusch, Hughes, Johnson, and Minch (1988) found that 20 percent of target employees had co-worker friends. In their later study, Rusch, Hughes, and Johnson (1988) observed a figure of 23 percent.

Minch (1987) also found a marginally significant relationship ($p < .10$) indicating that target employees with higher VACG production scores tended to have more co-worker friends than employees with low production scores. She also found that employees with friends tended to have higher independence scores, and that target employees with high VACG behavior and social skill scores tended to have co-worker friends.

Advocating

Rusch, Hughes, and McNair (1988), define advocating in the following manner.

> Co-worker advocates for the target employee by optimizing, backing and supporting the target employee's employment status. Optimizing refers to encouraging a supervisor to assign high-status and relevant tasks to the target employee, backing refers to supporting target employee's rights, for example, by attempting to prevent practical jokes aimed at the target employee. It also includes speaking up for the target employee or offering explanations during differences of opinion. Supporting relates to providing emotional support to the target employee in the form of friendship, association, etc. (p. 6)

There are therefore three proposed components to advocating; optimizing, backing, and supporting. Other definitions also appear to include aspects of these three areas (see Table 1). It is debatable whether all three components need to occur simultaneously for true advocacy to be observed, or whether the occurrence individually of each of the aspects of the definition can be considered advocacy. For example, if a co-worker acts only in the supporting aspect of the advocate role, is she providing advocacy? If so, then emotional support or friendship could be considered advocacy. However, if a co-worker optimizes and backs a supported employee, but does not intentionally interact with him outside of the workplace, is she acting as an advocate?

Shafer (1986) stated that advocacy can take on at least 4 forms. First, to ensure that the employee's rights are protected. Second, to prevent the employee from "getting stuck" performing jobs considered less desirable or prestigious than those generally completed by other workers. Thirdly, to minimize practical jokes and fourthly, to diffuse/address confrontations which may occur between the target employee and his/her co-workers. Shafer then goes so far as to state "...co-worker advocates may function to provide a communicative interface between the student (worker), the student's (worker's) parents or residential counselor and the employer" (p. 219).

Wehman (1981) suggested the use of co-worker advocates to mediate problem situations involving the target employee and as an ongoing contacts within particular businesses. For example, Stainback, Stainback, Nietupski, and Hamre-Nietupski (1986)

suggest that the use of co-worker advocates provides at least two advantages. First, co-worker advocates can assist with the transfer of supervision and second they can facilitate the formation of friendships.

Very few studies actually present evidence of co-worker advocacy in the employment setting. Minch (1987) found that only 12 percent of employees with handicaps had co-worker advocates. In contrast to these findings, Rusch, Hughes, Johnson, and Minch, (1988) observed that 42 percent of employees with handicaps had co-worker advocates. Rusch, Hughes, and Johnson (1988) in a subsequent study observed 37 percent of target employees had co-workers. Minch (1987) also found that target employees with low production skills most often had co-worker advocates. McNair (1989b) found that in the majority of cases (61%), co-workers would advocate only when prompted to do so by others, while in 25 percent of cases, co-workers would advocate spontaneously.

Evaluating.

Evaluation has been defined in a variety of ways (see Table 1). McLoughlin, Garner, and Callahan (1987) suggest there are three distinct types of evaluation which occur in employment sites.

> 1. Evaluation during the training or massed trials of core routines
> 2. Job referenced evaluations of episodic work routines and job related routines
> 3. Observational evaluations of how well the new employee is accommodating to the culture of the workplace. (p. 139)

The first two of these three involve evaluation of daily routines versus those routines which occur in a less than daily fashion. For example, in a fast food setting, workers may be required to sweep a floor and wash or wipe tables on a daily basis. However, they may be required to clean sauce dispensers on a weekly basis. The former of these then would be an example of a core routine and the later of an episodic routine. An evaluation therefore is not complete unless as much as possible it assesses performance of both types of routines.

The final area to be evaluated regards assessment of how an employee is adapting to the work environment, or work adjustment. Studies have shown that job satisfaction is significantly related to job performance (Talkington and Overbeck, 1975) and to the value of the work performed (Gold, 1973).

Schutz, Rusch, and Lamson (1979) provide one of the earliest studies in which co-workers were recruited to evaluate target employee performance. They used an employer validated

intervention strategy to improve work behavior. Upon completion of the target employee's work, the authors then simply asked co-workers whether they would accept the quality of the work completed. Subjective evaluation by co-workers was therefore used as a standard to judge target employee performance on that particular task.

Schutz, Jostes, Rusch, and Lamson (1980) also used co-workers to evaluate target employee work performance. Specifically, co-workers were asked if they would accept the work quality of a mopped or swept floor. Crouch, Rusch, and Karlan (1984) used supervisor evaluation of improved task duration and starting times of three employees with mental retardation resulting from intervention.

White and Rusch (1983) used co-workers to evaluate the work performance of target employees in five cafeteria settings. Co-workers were used to assess job skills and work quality, level of target employee responsibility, the relationships to supervisor and co-workers and the target employees ability to manage time. Workers with mental retardation had a mean IQ of 53.6. White and Rusch concluded that because co-workers observe the full range of target employee job performance, they offer the potential of best evaluating qualitative changes in work behavior. The authors caution, however, about the disparate nature of evaluations. In other words, depending upon who is evaluating co-workers, ratings may be inflated or deflated. Co-workers tended to rate performance higher than shift supervisors or managers, with target employees with mental retardation rating themselves the highest. In generalizing these findings, the reader should also take into consideration the fact that although co-worker evaluations may be based upon the greatest breadth of experience with the target employee, supervisors and managers most often are in positions of making decisions about the future employment status of the worker with handicaps.

Brooke and Shafer (1985) used an employer to deliver reinforcement based upon an evaluation of an employee with mental retardation. At the end of a work shift, the employer would record a plus or a minus depending upon the worker's performance that day. A changing criterion design was used whereby the worker was required to collect gradually increasing numbers of pluses before receiving reinforcement.

Minch (1987) observed that 64 percent of target employees were evaluated by their co-workers. Similar figures of 70 percent (Rusch, Hughes, Johnson, and Minch, 1988) and 62 percent (Rusch, Hughes, and Johnson, 1988) also have been observed. Minch also refers to Shafer's (1986) explanation for the occurrence of evaluating in the workplace, suggesting that

this high rate of evaluating is due to the minimal amount of time or skills necessary to be involved in this co-worker role. Perhaps this is reflective of the current nature of evaluation in employment settings, but clearly to evaluate an employee with handicaps' work performance adequately, requires just the opposite. That is, to truly evaluate an employee's work performance requires skill and time. A better explanation for the high figure may be that the role is required (prescribed) (McNair, 1989b) of co-workers by their employer or requested of them by the employment specialist. McNair found that a key problem with the Rusch, Hughes and McNair (1988) definition of evaluation was the phrase "Co-worker when acting as supervisor," as many employment training specialists indicated that this does not occur. In spite of this, is was found that in slightly more than 50 percent of cases, co-workers did evaluate target employees.

Information Giving

Rusch, Hughes, and McNair (1988), define information giving as, "The co-worker acts as a source of information by volunteering instruction when it is perceived to be needed, and in answering the target employee's questions" (p. 7) . This role was identified partially to distinguish non-Individualized Written Rehabilitation Plan (IWRP) training from IWRP training, and partially to assess impromptu training as a volitional co-worker role (McNair, 1989b). Salzberg, McConaughly, Lignugaris/Kraft, Agran, and Stowitschek (1987) studied factors which differentiated characteristics of highly valued workers from workers in general. One of the criteria observed, was that highly valued workers would request additional clarifying information if directions were incomplete or ambiguous in relation to the performance of a task. Therefore, it is important to know whether co-workers provide input to target employees when they (target employees) exhibit information-seeking behaviors. Otherwise, if co-workers do not take on information giving roles, the valued behavior of clarifying information may be extinguished.

Rusch, Minch, and Hughes (in press) in their survey of supervisors, found that supervisors felt that the providing of information was an important co-worker role. Chadsey-Rusch and Gonzalez (1988) support these findings with observational data. Based upon observations of interactions between workers with mild to moderate retardation and their co-workers during various periods during the work day, it was noted that the provision of information accounted for 26 percent of interactions at arrival of workers to work, 36 percent at break, 22 percent during work period one, and 13 percent during work period two. Additionally, questions accounted for 27 percent of interactions at arrival, 13 percent at break, 25 percent during work period one and 30 percent during work period two. Therefore, information seeking behaviors overall accounted

for between 43 and 53 percent of the social interactions they observed in the workplace.

McNair (1989b) found that 69 percent of co-workers spontaneously volunteer instruction/feedback to and answer the questions of target employees. Additionally, another 24 percent of co-workers will answer questions when asked by supported employees. In only 7 percent of cases did employment training specialists indicate that co-workers will shun the questions of target employees. This figure was much higher than that noted for training earlier by McNair(33% of co-workers). This finding further supports the importance of training of information seeking behaviors in supported employees (Salzberg, McConaughly, Lignugaris/Kraft, Agran, and Stowitschek, 1987) in that not only are these behaviors considered desirable by employers, they tend to be supported by co-worker behaviors.

Variables Influencing Co-worker Involvement

Co-worker roles are not performed in a void. Clearly there are a variety of factors which might potentially influence the occurrence of associating, training, etc. Recently research has looked at factors potentially influencing co-worker involvement. Other variables which he identified were a) integration related variables; social integration, physical integration, and vocational integration (McNair, 1989b), b) target employee characteristics (McNair, 1989a), c) employment site characteristics (McNair, 1990), and d) employment characteristics (McNair, 1990). Each of these areas will be discussed below.

Integration Variables

Social Integration. This variable is related to whether the target employee had an appropriate number of opportunities to interact with co-workers without negative effects on job performance (Rusch, Hughes, & McNair, 1989). It was observed that 79 percent of employees with disabilities had an appropriate number of opportunities to interact with co-workers without negative effects on job performance (few 10%). Interestingly, in 11 percent of cases there were no opportunities to interact with co-workers without negative effects on job performance. This causes one to consider whether the benefits of supported employment other than social integration are sufficient. Perhaps this implies that supported employment comprises a variety of models in which all benefits of supported employment are not available. This may be due to the model used in the supported employment program, or the degree to which the model has been implemented (Trach & Rusch, 1987). This is observed in mobile work crews where there is the potential for earning of minimum wage and the program is to some degree "community based." However, there is limited opportunity for interaction with nonhandicapped peers.

Physical Integration. This variable is related to the opportunities the target employee had to work, take breaks and eat meals in the same areas at the same time as co-workers. In 86 percent of cases, target employees worked, took breaks and ate meals in the same areas as co-workers (0% do not work in same area but does have breaks/meals in same area at same time; 14% do not work, have breaks/meals in same areas at same times 14%). Shafer, Rice, Metzler, & Haring (1989) took a subtly different approach to this same variable stating, "co-workers take breaks or eat lunch with employees with mental retardation." The implication appears to be that this form of association is a kind of volitional role (McNair, 1989b), in that co-workers choose this form of association. Shafer et.al. found that in slightly more than 50% of cases, co-workers do take breaks or eat lunch with employees with mental retardation with varying degrees of frequency

Vocational Integration. Finally, McNair (1989b) investigated another variable influencing co-worker involvement for which he coined the term "vocational integration." This variable related to the degree to which the target employee is responsible for his or her own work and whether the tasks performed on the job were comparable or the same as those performed by co-workers with the same job level. Interestingly, in 57 percent of cases, the target employee did perform the same or comparable tasks as co-workers with the same job title. In 31 percent of cases, the target employee did his or her own work, but did not complete comparable work, and in 12 percent of cases, the target employee did not perform comparable work and the co-worker was partially responsible for the completion of the target employee's work. Shafer et.al. (1989) looked at vocational integration from the perspective of whether co-workers were dependent upon work completed by employees with mental retardation to get their own work done. Only in 14.8 percent of cases were co-workers never dependent upon the target employee and in slightly more than 40 percent of cases co-workers were dependent often or all of the time (seldom, 19.8%, sometimes 25.3%).

Target Employee Characteristics

McNair (1989a) looked at the relationship between target employee characteristics and co-worker involvement at the job site. A non-linear relationship was observed between co-worker involvement and IQ (eta=.81) and co-worker involvement and worker behavior (eta=.78) as measured by the Vocational Assessment and Curriculum Guide (VACG) (Rusch, Schutz, Mithaug, Stewart, & Mar, 1982). A relationship was also observed between co-worker involvement and interaction skills scores on the VACG (eta=.68) and the target employee's time on the job (eta=.65) although less significant.

Employment Setting Characteristics

Then, McNair (1990) investigated the influence of employment setting characteristics on co-worker involvement. Non-linear relationships were observed between co-worker involvement and the number of employees at the employment site (eta=.91), the number of nonhandicapped co-workers working in the same area (eta=.87), and the percentage of female co-workers (eta=.95). He concluded that based upon the significant nonlinear employment setting and individual characteristics, that interventionists must be aware that apparently more or less of a variable is not always beneficial. Rather the situation is more complex in that in some cases for example, more is better to a point where less is then better.

Employment Characteristics

Employment characteristics were loosely defined as characteristics of the supported employment program. McNair (1990) observed no significant differences in co-worker involvement among placement types. That is, there were no significant differences in co-worker involvement among individuals in clustered enclaves, dispersed enclaves, and individual placements. Students in mobile work crews were observed to experience significantly less co-worker involvement in comparison to the other placement types, but the mobile work crew sample size was insufficient to confidently draw this conclusion. Workers in service jobs (laundry, retail, food service, clerical, and health care) experienced significantly more co-worker involvement than workers in light industry (light industry, warehouse, and maintenance). No differences were observed across levels of employment training specialist involvement. These findings imply that specific placement and job types offer more co-worker involvement than others, and that this involvement is present independent of the level of employment specialist involvement.

Implications for Future Research

Two obvious conclusions can be drawn from this literature. First, there is much research which still needs to be done. Potential areas of emphasis for that research will be discussed below. Secondly, because of the conflicting nature of some of the research which is available, few conclusions may be drawn.

Research should be begun in each of the following role areas. Research in training might begin with the collection of more information on the specifics of the training which co-workers are providing. This includes information on the specific instructional areas (behavior, vocational skills, social skills) as well as the instructional methods co-workers are using inadvertently or by intent.

Regarding associating, extensity and intensity needs to be investigated in the workplace as well as aggregation. The effects of social validation on associating relative to conformity and dependency in relation to Mehrabian's work should be investigated. Finally, an expanded instrument which assesses more facets of associating as listed above would provide a more complete indication of association in the workplace which might then be used to guide interventions. Regarding befriending, a good start would be the development of a definition of friendship in the workplace. From there, studies should address the normal pattern of friendship in the workplace to be used as a guide in the development of friendships among persons with and without disabilities. Then, the pool of items relative to advocating must be increased. Advocating is not a single behavior, but a collection of behaviors, so that instruments measuring advocating must include a spectrum of behaviors under the umbrella of advocating. Once this has been accomplished, research into the types of advocating which are occurring in the workplace and whether advocating types are predictive of employment outcomes can be conducted. Finally, evaluating must not be linked only to situations where the co-worker is "acting as supervisor" (Rusch, Hughes, & McNair, 1989). Additionally, assessments of evaluating by co-workers should separate out the sphere of evaluation (work adjustment, core routines, etc.), and be data based built upon operationalized definitions of worker behavior in order to circumvent evaluator bias.

Regarding research into "variables influencing co-worker involvement," McNair's (1989a, 1989b, 1990) work has most probably just exposed the tip of the iceberg. Much research needs to be completed to flesh out the meaning of the nonlinear nature of relationships between a variety of factors and co-worker involvement.

Conclusions

With the movement of individuals with disabilities into the work force, new doors of research opened. Research into non-sheltered, community based, competitive employment options at best is in the toddler stages. As evidenced by this review, co-worker involvement is even less developed. However, research shows that co-workers are involved with employees with handicaps in at least the six areas described, and probably in other ways for which measures have not yet been developed. Additionally, strong relationships were observed between co-worker involvement and a variety of Hopefully, this paper will have provided a reference point for the researcher from which to plan further activities and a basis on which to build further activities geared toward the illumination of co-worker involvement in supported employment.

Table 1
Research report comparison of co-worker involvement experienced by workers in supported employment programs.

Co-worker Role	Minch (1987) n=33	Rusch Hughes Johnson & Minch (1988) n=309	Rusch Hughes & Johnson (1988) n=313	McNair n=72	Translation of McNair response to Yes/No response
Training	52	61	52	33 (2) 43 (1) 24 (0)	Yes Yes No
Associating	45	87	78		NA
Frequency	-	-	-	76 (2) 18 (1) 6 (0)	
Nature	-	-	-	81 (2) 15 (1) 4 (0)	
Befriending	39	20	23	4 (2) 13 (1) 83 (0)	Yes Yes No
Advocating	12	42	37	25 (2) 61 (1) 14 (0)	Yes Yes No
Evaluating	64	70	62	26 (2) 28 (1) 46 (0)	Yes Yes No
Information Giving	-	-	-	69 (2) 24 (1) 7 (0)	Yes Yes No
Collecting Data	6	17	18	-	NA

*All figures are percentages except those in parentheses which represent the responses to the Co-worker Involvement Instrument.

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